

REMARKS

The Examiner has rejected claims 1-13 under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

Applicants have amended claim 1 to overcome the Examiner's rejection thereof. Specifically, applicants have amended claim 1 to read that the transient dilution air control arrangement comprises "a constant mass flow stream; a variable mass flow stream; and wherein said variable mass flow stream is connected with said constant mass flow stream prior to the inlet of the partial flow dilution tunnel." Applicants contend that this particularly claims that which is disclosed in the written specification and the drawings of the instant application and therefore overcomes the Examiners rejections under 35 U.S.C. §112, second paragraph. Additionally, applicants have amended claim 6 providing the proper antecedent basis for "the flow of intake air". Applicants therefore contend that claims 1-13 meet the requirements of 35 U.S.C. §112, second paragraph and respectfully request reconsideration and withdrawal of the rejections thereof.

The Examiner has rejected claims 1, 2 and 9 under 35 USC §103 (a) as being unpatentable over Hendren US Patent Publication 2003/0136177.

Applicants have amended claim 1 to more positively set forth, that which is regarded as the invention as stated above. Specifically, claim 1 has been amended by including that the variable mass flow stream is connected with the constant mass flow stream prior to the inlet of the dilution tunnel. This connection of a variable mass flow stream and a constant mass flow stream is not taught or suggested in the Hendren reference. The Hendren reference teaches that dilution air is provided by a fixed flow rate pump 29 and the flow therefrom is controlled by a proportional solenoid valve 28. One skilled in the art would readily recognize that the proportional valve 28 creates a backpressure in the line from the fixed flow rate pump 29. This backpressure therefore causes the flow rate out of the pump 29 to be the same as the flow rate coming from proportional valve 28. Thus, what Hendren teaches is one stream of dilution air and that the quantity of dilution air being controlled by the proportional solenoid valve 28 and nothing more. Therefore the flow of air from the

pump 29 is identical to the flow coming from the proportional valve 28. Hendren therefore cannot and **does not divide the dilution air** into a constant mass flow stream that is connected (summed, or otherwise combined) with a variable mass flow stream. Hendren only teaches the supply of dilution air, in a single stream that is controlled by way of the proportional solenoid valve 28. Furthermore, Hendren teaches that the dilution air is controlled in an inverse proportion to the ratio of engine air inlet flow rate and the engine inlet air flow rate at idle. This is contrary to the teaching of the present application specifically, the present system teaches that the exhaust gas sample is maintained proportional relative to the engine intake air flow. This is an error in the disclosure of the Hendren application. Applicants remind the Examiner that MPEP § 2143 Mandates the three criteria that must be met to provide a prima facie case for obviousness:

“...three basic criteria must be met. First, there must be some motivation, either in the references themselves or in knowledge generally available to one of ordinary skill in the art, to modify the references or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claimed limitations.”

Specifically, as now claimed in independent claim 1 the transient dilution air control arrangement controls dilution airflow by way of a variable mass flow stream that is connected with a constant mass flow stream prior to the inlet of the dilution tunnel. This is clearly contrary to the teachings of the Hendren reference that teaches a single flow from a fixed displacement pump that is controlled by a proportional solenoid valve. Therefore there is no motivation for controlling the dilution air flow by connecting a constant flow stream with a variable flow stream as is presently claimed in independent claim 1. Furthermore, the teachings of the Hendren reference are different from the teachings of the present invention by stating the dilution airflow is controlled in an inverse proportion to the ratio of intake air flow and the engine intake air flow at idle and therefore cannot provide a reasonable expectation of success. Lastly, the Hendren reference does not teach or suggest the features of claim 1. Applicants therefore contend that claims 2 and 9 add additional features to claim 1, which is believed to be in condition for allowance and respectfully requests reconsideration

and withdrawal of the rejection under 35 USC §103 (a) of claims 1, 2 and 9. If the Examiner persists in this erroneous rejection Applicants will have no other alternative than to appeal this rejection.

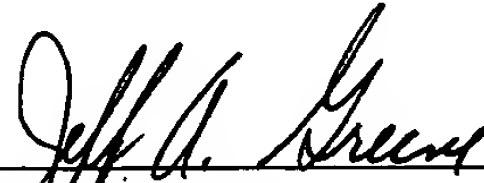
Regarding claims 10 - 13, these claims add additional features to independent claim 1 from which they depend. Since claim 1 is now believed to be in condition for allowance, claims 10 – 13 are believed to be in condition for allowance for at least the same reasons as set forth above. Applicants therefore respectfully requests reconsideration and withdrawal of the rejection under 35 USC §103 (a) of claims 10 - 13.

The Examiner has provisionally rejected claims 1 - 13 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 14-52 of copending Application 10/692871.

Applicants are quite confused by the Examiner's provisional rejection under the judicially created doctrine of obviousness-type double patenting and respectfully traverse this provisional rejection. Specifically for the reasons as follows: First, the copending application for which this rejection is based was filed due to a restriction requirement placed on the instant application, by the Examiner, which contained all of the pending claims 1-13 of the instant application and claims 14-52 of copending application No. 10/692,871. Therefore the basis for the Examiners provisional rejection is based on the new understanding of the claims of both applications and not the result of claim 1 **as it is now amended** (i.e. not the result of Applicants action). Second, the term of a divisional (or parent of a divisional) will be the date of 20 years from the filling of an earlier patent for which priority is requested (therefore no undue extension of patent rights). However, Applicants do understand that a terminal disclaimer requires a statement that causes a patent to be unenforceable if it ceases to be commonly owned with the other application or patent and therefore have provided an appropriate terminal disclaimer in an effort to move both applications towards allowance.

It is respectfully urged that the subject application is in condition for allowance and allowance of the application at issue is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jeff A. Greene", is written over a horizontal line.

Jeff A. Greene
Registration No. 45,756
Patent Agent
Caterpillar Inc.

Telephone: (309) 675-1056
Facsimile: (309) 675-1236
G:/JAG/Amend/00-714-5.doc